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ABSTRACT

The approaches used by the National Assessment of Educational Progress (NAEP) to characterize syntax, cohesion and mechanics are described. These approaches are different from the Primary Trait System, a scheme used by NAEP for rating essays. Part one of the publication describes the procedures NAEP used to characterize differences in syntactic structures. This approach is based on an analysis of the grammatical forms in which sentences are cast. Part two describes the procedure used to rate the cohesiveness of each essay. This approach is concerned with the number and variety of devices used to link and carry forward developing ideas. Part three presents the procedures NAEP used to characterize writing mechanics. This approach accounts for matters of manuscript form. The systems used to tally error rates are essentially unchanged from those used in earlier assessments, with some refinements. (Author/GK)
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GUIDELINES FOR DESCRIBING THREE ASPECTS OF WRITING: SYNTAX, COHESION AND MECHANICS

No. 10-W-50

by
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and
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National Assessment of Educational Progress
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FOREWORD

When the U.S. Office of Education was chartered in 1867, one charge to its commissioners was to determine the nation's progress in education. The National Assessment of Educational Progress (NAEP) was initiated a century later to address, in a systematic way, that charge.

Each year since 1969, National Assessment has gathered information about levels of education achievement across the country and reported its findings to the nation. NAEP surveys the education attainments of 9-year-olds, 13-year-olds, 17-year-olds and young adults, ages 26-35, in ten learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure possible changes in education achievement. National Assessment has interviewed and tested more than 630,000 young Americans since 1969.

Learning area assessments evolve from a consensus process. Each assessment is the product of several years of work by a great many educators, scholars and lay persons from all over the nation. Initially, these people design objectives for each subject area, proposing general goals they feel Americans should be achieving in the course of their education. After careful reviews, these objectives are given to exercise (item) writers, whose task it is to create measurement tools appropriate to the objectives.

When the exercises have passed extensive reviews by subject-matter specialists, measurement experts and lay persons, they are administered to probability samples. The people who compose these samples are chosen in such a way that the results of their assessment can be generalized to an entire national population. This is, on the basis of the performance of about 2,500 9-year-olds on a given exercise, we can make generalizations about the probable performance of all 9-year-olds in the nation.

After assessment data have been collected, scored and analyzed, National Assessment publishes reports to disseminate the results as widely as possible. Not all exercises are released for publication. Because NAEP will readminister some of the same exercises in the future to determine whether the performance level of Americans has increased, remained stable or decreased, it is essential that they not be released in order to preserve the integrity of the study.

GUIDELINES FOR DESCRIBING THREE ASPECTS OF WRITING: SYNTAX, COHESION AND MECHANICS

Introduction

The National Assessment of Educational Progress (NAEP) has carried out three national assessments of writing. The first was conducted in 1969-70, the second in 1973-74, and the third in 1978-79. Each consisted of a number of survey questions, multiple-choice items and essay tasks administered to nationally representative samples of 9-year-olds, 13-year-olds and 17-year-olds. The major goal of these assessments is to provide information about changes in written responses to writing tasks. Thus, after each assessment, results are reported to the public along with several released essay topics; other essay topics are retained and readministered in subsequent assessments.

As part of the most recent writing assessment, one unreleased essay topic for each age group was administered for the third time, making possible direct comparisons between essays collected in 1978-79 and those written by equivalent samples of students in 1969-70 and 1973-74. The essays were then evaluated and described from four different perspectives--their mastery of the required primary trait, their cohesion, their syntactic characteristics and their mechanics.

The purpose of this publication is to describe the approaches NAEP used to characterize syntax, cohesion and mechanics. Readers should understand that these approaches are different from the Primary Trait System (PTS), a scheme for rating essays that NAEP uses to provide a basic measure of a writer's overall success in carrying out a specified writing task. Details of PTS appear in Using the Primary Trait System for Evaluating Writing.[1] Briefly, the rationale underlying PTS is that most writing is done for a definite purpose (to a particular audience for a specific reason), and that particular writing tasks require particular rhetorical approaches in order to be successful. Four levels of success (basically--inadequate, adequate,

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[1] A publications list describing available materials and their costs is available from the National Assessment of Educational Progress at the following address:

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Denver, Colorado 80295

competent and excellent) are fully defined for the primary trait of each writing task, and responses are sorted into these categories by trained readers. But an essay's primary trait reflects only one aspect, albeit fairly global, of any piece of writing.

Accordingly, Part One of this publication describes the procedures NAEP used to characterize differences in syntactic structures. This approach, also new for NAEP, is based on an analysis of the grammatical forms in which sentences are cast. More specifically, sentences are divided into one or more independent clauses (T-units), and the types of words, phrases and clauses within the T-units are identified.

Part Two describes, for the first time, the procedure used to rate the cohesiveness of each essay. This new rating approach is concerned with the number and variety of devices used to link and carry forward ideas being developed.

Part Three presents the procedures NAEP used to characterize writing mechanics. This approach takes into account matters of manuscript form such as spelling, punctuation, diction, agreement and pronoun usage. The systems used to tally error rates are essentially unchanged from those used in earlier assessments, but some refinements have been made.

Part One: Guidelines for Describing Syntax

Background Information About Syntactic Ability

This descriptive approach compiles inventories or tabulations of the kinds of constructions (syntactic forms and patterns) a writer has used in putting together the sentences composing any piece of writing. It does not involve the identification of errors or mistakes in writing. (Error identification does, of course, take place in NAEP's mechanics scoring, which looks at mistakes and alterations of all kinds, including syntactic errors such as faulty agreement or parallelism.)

Syntactic ability analysis is based on the fact that written language is expressed in units called sentences and that sentences consist of words, phrases and clauses arranged in certain patterns and relationships. NAEP's syntactic analysis begins with the sentences a writer has produced and divides each sentence into one or more independent clauses called T-units. Reader analysts next identify the form of every word, phrase and subordinate

clause included in each independent clause (T-unit). The process is much the same as that encountered in diagramming or parsing sentences.

The reason NAEP has elected to include such a detailed description of syntactic ability as part of its three writing assessments is that research over the past fifteen to twenty years on the national development of writing ability has shown a strong positive relationship between increases in the occurrence of certain syntactic structures and increases in writing maturity. Young writers, as they grow older, quite unconciously begin to use certain syntactic structures more frequently in their writing. Thus, tabulations of syntactic structures can be used not only to gauge or index the range of writing maturity for groups of writers at different ages, but also to describe writing maturity for groups at the same age at different points in time.

Contemporary study of syntactic ability in writing began in 1965 with the work of Kellogg Hunt, who employed a then-new transformational model of sentence structure to analyze the sentences of young people's writing along the general lines discussed above. Hunt's findings substantiated what writing teachers long had suspected, namely, that as writers mature in age, experience and cognitive ability, they make increasing use of the two strategies of syntactic sentence combining--embedding and conjoining. It is these strategies that permit maturing writers' sentences to achieve the structural complexity necessary to convey the increasingly complex ideas emerging from their developing thought and cognition. Hunt also recognized that the independent clause is the smallest unit of writing within which embedding and conjoining can occur; it was he who coined the term "T-unit," short for "minimal terminable unit," so called because it is also the smallest unit of writing that can be punctuated as a complete sentence.

From the work of Hunt and his successors, a great deal is now known about normal syntactic development. For example, average T-unit length increases from the earliest writing years until it reaches a plateau at grade twelve, after which average clause length increases up to another plateau defining skilled (professionally published) adult writing. Similarly, the frequency of subordinate clause embeddings increases until grade twelve, after which the frequency of reduced clauses (clauses reduced in form to phrases and words) increases. Certain structures have been

identified as "early blooming," others as "late blooming." Modifying embeddings increase in straightline fashion from children's earliest writing to that of skilled adults, as do numbers of sentences combined--that is, the average number of embeddings and conjoinings per T-unit. Nominal embeddings tend to vary as a function of style and subject matter rather than age, except that they occur with unparalleled frequency in adult expository writing. These are only a few examples of the general facts now regarded as parameters of normal syntactic development.

Since its beginning, NAEP has been concerned with measuring not only the presence or lack of ability, but also the degree of developing ability across groups of young writers. Thus, it was only natural that the description of syntactic structures would become an increasingly integral part of NAEP's analytical scheme. However, an even modestly thorough analysis of syntax is a time-consuming process requiring highly trained readers. It is extremely complex and very expensive. Consequently, it has taken NAEP a long time to implement this important evaluation procedure, for reasons readily exemplified by the following overview of the syntactic analysis procedure used in the third assessment.

For example, here is the first sentence of an essay written by a 9-year-old in response to one of the NAEP exercises:

> The girl is holding a large jar with fireflies inside it that look like butterflies, and she is wondering whether she should change her mind and let them go.

Here syntactic analysis identifies the sentence as consisting of two independent clauses (two T-units) separated at the comma, thereby dividing the sentence. The main clause of the first T-unit, "The girl is holding a jar," consists of three phrases in the familiar subject-verb-object order. The first T-unit also contains three modifying parts, the word "large," the phrase "with fireflies inside it," and the subordinate clause "that look like butterflies." These three modifiers are said to result from a process of sentence combining known to linguists as embedding. That is, the entire T-unit is said to result from an abstract (and usually unconscious) thought structure consisting of the following four sentence-like propositions:

the girl is holding a jar
  the jar is large
  the jar has fireflies inside it
    the fireflies look like butterflies

In representing these four propositions as a single T-unit, the writer embedded the final three into the first one by changing their forms (transforming them) and repositioning them in certain ways. Here, all three embeddings happen to result in modifiers--the first, the adjective "large;" the second, the genitive (possessive) phrase "with fireflies inside it;" and the third, the relative (adjectival) clause "that look like butterflies."

Not all embeddings result in modifiers, nor is embedding the only process of sentence combination, as the second T-unit of the example shows. Here the main clause, "she is wondering ____" contains as its object not a simple noun or noun phrase, but rather an embedded sentence functioning not as a modifier but as a nominal. That is, it is a sentence transformed so that it serves as a multiword noun naming what the girl is "wondering." In this T-unit the abstract thought structure can be represented as follows:

she is wondering ____
  she should change her mind
  and yes or no?
  she should let them go

Here the writer has embedded the final two sentences as a nominal, specifically, the nominal (noun) clause "whether she should change her mind and let them go," functioning as object of "wondering." Notice also that the last two sentences, in addition to being embedded in the first, are joined to each other, in the form of a single clause, by a process called conjoining, sometimes termed coordinating or compounding. Embedding and conjoining, then, are the two processes writers use to incorporate separate propositions of thought into sentences of text. The thought structure of the full example sentence would look like this:

The girl is holding a jar
  the jar is large
  the jar has fireflies inside it
    the fireflies look like butterflies

, and

she is wondering ____
  she should change her mind
  and yes or no?
  she should let them go.

Here we see that not only have the verb phrases of the final two sentences been conjoined, but also the two independent clauses (T-units) themselves have been conjoined, to form what we familiarly call a compound sentence.

In general, the syntactic analysis reported in this publication begins by marking off the one or more T-units that compose any sentence, and then, within each T-unit, identifying the words, phrases and clauses that result from the processes of sentence combining--embedding and conjoining. (Part Three shows how sentence fragments are handled.) Embeddings occur either as nominals or as modifiers. Conjoinings may be of two kinds--coordinate or semantic. An outline of T-unit constituents follows; those classified by NAEP are underlined. Analytical procedures for describing T-units, embeddings and conjoinings are fully explained and exemplified in the next section of this report, Syntax Scoring Guide, page 9.

Outline of Syntactic Analysis

I. T-Unit Delineation

II. Embedding

A. Nominalization

1. Nominal Clause--Any clause used as a subject, direct object, subject complement, object of a preposition or appositive.

a. Factive clause
b. Question clause

2. Nominal Phrase--Any phrase used as a subject, direct object, subject complement, object of a preposition or appositive.

a. Gerund phrase
b. Infinitive phrase
c. Derived-noun phrase

B. Modification

1. Adjectival

a. Relative clause--A restrictive or nonrestrictive clause that modifies a noun or, occasionally, a complete sentence. (Includes clauses of time, place and manner that are relative in form.)

b. Modifying phrase--A restrictive or a nonrestrictive phrase that directly follows the noun it modifies.

1) Participial phrase, active or passive
2) Infinitive phrase, active or passive
3) Prepositional phrase
4) Appositive noun phrase, post-noun
5) Coordinate adjectives, post-noun

C. Transposed modifying phrase--Any nonrestrictive modifying phrase that does not follow the noun it modifies.

d. Genitive (possessive) modifier

1) Post-noun "of" phrase
2) Pre-noun possessive noun
3) Pre-noun possessive pronoun

NOTE: Even though NAEP classified genitives separately, pre-noun, possessive nouns and pronouns can be classified under heading "e," below (single word pre-noun modifier), and post-noun "of" phrases can be classified under "b," preceding (modifying phrases). The Syntax Scoring Guide reflects this alternate classification procedure.

e. Single word pre-noun modifier

1) adjective
2) verb (participle, active or passive)
3) Noun
4) Adjunct (noun, verb or adjective) in compound noun

2. Adverbial

a. Adverbial clause--A subordinate clause in the following semantic categories:

1) Reason (cause or purpose)
2) Condition
3) Concession

b. Adverbial phrase--A subordinate phrase in the following categories:

1) Reason (cause or purpose)
2) Condition
3) Concession

NOTE: Clauses and phrases of time, place and manner, traditionally labelled adverbial on semantic grounds, are classified here as relative because that is their form. However, NAEP coded them differently from other relative clauses and phrases so they can be reported either separately as adverbial, or in combination with all relatives.

III. Conjoining

A. Coordinate--Intra-T-unit grammatically coordinate conjoining using "and" or "or"

B. Semantic

1. Intra-T-unit--Conjoining within T-units in the following semantic categories:

a. Comparative (more or less than, equal to)
b. Clauses and phrases of reason, condition and concession, while included in II.B.2 above as adverbial modifiers and so identified traditionally, may alternatively be identified as resulting from intra-T-unit (subordinate) semantic conjoining.

2. Inter-T-unit--Joining of whole T-units by means of connective words expressing the following semantic relationships:

   a. Additive and sequential "and"
   b. Disjunctive
   c. Intensifying additive
   d. Sequential
   e. Adversative
   f. Illative

NAEP has always understood that the results of a syntactic analysis yield information about writing ability that is different from that provided by ratings of overall quality or primary rhetorical trait or by counts of mechanical errors. As part of the mechanics analysis in the first assessment, errors in sentence structure were tabulated and correct constructions were subjectively characterized. For the second assessment, in an effort to refine this procedure but still retain terms easily understood by lay readers, the system was amplified to include a categorization of sentence types--both correct and incorrect. These guidelines, which are retained in the current mechanics scoring procedures and appear on pages 30 to 40 of Part Three, basically categorize correct sentences as being simple, compound or complex (with or without one or more phrasal embeddings), and incorrect structures as being run-ons or fragments. Unfortunately, this effort, although it provided a measure of sentence length and some information on embedding, left much to be desired in terms of providing the measures developmental research has proved most important. For example, mean T-unit length and mean clause length could be approximated only roughly, and the total number of embeddings and conjoinings could not even be estimated. The approach taken in the third assessment, reported herein, remedies these earlier deficiencies.

Users of this guide should realize, however, that worthwhile information about syntactic ability can be obtained without using the NAEP guidelines in their entirety. Mean T-unit length, for example, a basic measure of writing developement, can be computed simply by counting the number of words and T-units in each essay. At the next level, readers can additionally count the number of subordinate clauses within T-units, thus making possible the computation of mean clause length. Beyond that, readers can tally the total number of embeddings and conjoinings in each T-unit without categorizing them. A still more detailed count would reflect the

number of conjoinings as opposed to the number of embeddings; and so on. Obviously, the closer a syntactic analysis approaches identification of discrete surface-structure constituents, the more time consuming, expensive and grammatically problematic it becomes.

NAEP's scoring guides for syntax are presented in the following section of this document. Not all the categories recognized by linguists are included--and linguists frequently disagree among themselves as to what the categories are--nor will the distinctions between categories suit all people. Nonetheless, a very real effort was made to analyze the essays in a way that would provide worthwhile information to both practitioners and researchers. Readers should remember that this is the first time NAEP has attempted an analysis as detailed as that specified by these guidelines, and some of the procedures used will almost certainly be modified in the future.

Syntax Scoring Guide

Scoring an essay for syntactic ability consists generally of three operations:

--marking off or delineating the sequence of T-units (independent clauses) composing the sentences as written;

--identifying the embeddings within each T-unit, generally according to whether each is a nominal or a modifier, and specifying the particular type of each; and

--identifying instances of conjoining, both within T-units (intra-T-unit) and between them (inter-T-unit), according to whether each is coordinate or semantic (logical), and among the latter, specifying the particular type of each.

I. T-Unit Delineation

In marking T-units, each main clause with all of its phrases and subordinate clauses counts as one T-unit. The slash marks in the following example illustrate how the T-units in its sentences would be identified.

> / I like the idea of a young people's recreation center. / It could be financed by the city or by contributions from individuals. / Located in the center of town, it would be convenient to everyone. / If it were properly set up, it would prove that young people who are given responsibility can manage their own recreation constructively. /

Here the four T-units correspond exactly to the writer's first four sentences. The first T-unit is a simple sentence of one main clause with no verbal phrases, conjoining or subordinate clauses.

The second T-unit is likewise a simple sentence of one main clause, but it also contains an instance of conjoined phrases. The third T-unit is yet another simple sentence of one main clause, but it also features a verbal phrase formed by participial conjoining. The fourth T-unit is a complex sentence of one main clause plus three subordinate clauses, one adverbial (condition), one nominal and one adjectival (relative). Compound sentences, however, which consist of two or more main clauses, are divided into more than one T-unit.

> / Members of the center would decide the house rules by vote, / and a panel of adults would be given right of approval. /

Here a single compound sentence is segmented into two T-units, each corresponding to an independent clause within the sentence. The same procedure applies to compound sentences whose independent clauses are joined by semicolons and conjunctive adverbs.

> / Parents and youth would share responsibility under such a system; / consequently, neither side could blame the other in case things didn't always go smoothly. /

Sentence fragments, whether faulty or stylistically acceptable, are generally included as a part of the T-unit to which they belong grammatically, regardless of the writer's punctuation.

> / Naturally, problems would crop up from time to time. Like trouble with drugs or alcohol. /

Another kind of fragment, ordinarily referred to as self-contained, sometimes does occur. This type of fragment is neither a part of the T-unit preceding nor of the one following, but instead results from the usually unrecognized omission of its subject noun or all or a part of its verb.

> / But drug and alcohol problems whether or not we have a rec center /

Here the inadvertent omission of the verb, perhaps "occur" or "will occur," has created a self-contained fragment, which is nonetheless scored as a separate T-unit.

After only a small amount of practice, persons who can recognize the grammatical structure of written sentences can learn to mark off T-units at a pace approximating normal reading speed. Occasionally, of course, readers will have to make arbitrary decisions about where to mark T-units. For example:

> / Rainy days make you feel drowsy / when you wake up / you don't want to get up. /

Here, in the absence of punctuation by the writer, one cannot tell which T-unit the "when" clause is a part of. Thus, a segment at either dotted slash is appropriate, but not at both. Similarly, T-unit researchers differ among themselves about whether or not a T-unit boundary occurs when an entire compound sentence (two T-units) occurs under the dominance of a subordinating conjunction. For example:

/ I don't like to meet the bus on rainy days because I have a long way to walk, / and before I get to the bus I will get wet if I don't have my raincoat and hat. /

In this case, some researchers would segment at the dotted slash, since what follows, considered alone, is indisputably an independent clause. Others would argue, plausibly enough, that the entire compound sentence, from ". . . I have a long way" to ". . . raincoat and hat," is subordinated under the dominance of "because," and that the entire example is therefore one T-unit only, consisting of the main clause "I don't like . . ." modified by the adverbial "because" clause. Even though NAEP readers were instructed to use their judgment in these situations, another approach would be simply to decide at the outset whether compound sentences dominated by subordinate conjunctions will be segmented or not, then conduct one's analysis in a way consistent with this initial decision.

Sometimes a written response cannot be analyzed. When a paper is so undecipherable it cannot be intelligibly interpreted by a reader, it should be designated as illegible and receive no further scoring. Also, when a writer simply copies the exercise stem, or in some other sense does not respond to the assigned writing task, the response should be categorized as inappropriate for analysis and receive no further scoring. Blank papers can be separately designated as such.

It should be noted that in the examples, each T-unit including the first one and the last one is enclosed between slashes. This means that there is one more slash than there are T-units. In order to use slashes to tally numbers of T-units, some adjustment procedure should be used such as omitting the initial slash or subtracting one from the total number of slashes.

II. Identification of Embeddings

Once all T-units are delineated, each one is analyzed separately to tabulate the embeddings and conjoinings it contains.

A. Nominalization

1. Nominal clauses occur in forms called factive clauses and question clauses, and function in the various nominal positions--subject, object, object of a preposition, subject complement and appositive. Some examples follow.

   a. She told us *that we would have to pay the entire bill.* (Factive nominal clause functioning as object of "told")

   b. *The fact that libraries must be quiet places* should not dampen a person's enjoyment while using them. (Factive nominal clause functioning as subject of "should not dampen." Many grammarians would say that the clause starts with "that" and stands in opposition to the noun phrase "the fact.")

c. All our talk about *how reason provides the surest guide to right decisions* prevented no one from voting his emotions. (Question nominal clause functioning as object of preposition "about")

d. Some people never learn *who their real friends are.* (Question nominal clause functioning as object of "learn")

e. The answer is *that one of us will have to leave.* (Factive nominal clause functioning as subject complement of "is")

Frequently, nominal clauses functioning as subjects are positioned after the predicate of their T-unit, with the placeholder, or expletive, "it" serving as grammatical subject.

f. It was easy to see *that something had to be done.* (Factive nominal clause functioning as subject of "was," post-positioned with "it" expletive)

Although "if" is usually thought of as a subordinating conjunction in adverbial clauses, it introduces nominal clauses when it substitutes for "whether."

g. I wondered *if it had rained all night.* (Question nominal clause functioning as object of "wondered," using "if" meaning "whether")

Sometimes writers use pseudo nominal clauses that are not embeddings but rearrangements of normal sentence order whose function is to give referential prominence to, or as is sometimes said, to topicalize, information that would otherwise lack such prominence.

h. *What this country needs* is a good five-cent cigar.

Here the "what" clause is not an embedding but rather the result of an inversion (called a "cleft" by some linguists) of the simple statement "This country needs a good five-cent cigar." The difference is that in the cleft version, "a good five-cent cigar" is the important (sometimes called "new") information made prominent in the sentence by virtue of the topicalizing statement "What this country needs is," whereas in the simple version the entire predicate "needs a good five-cent cigar" is the new information, or the comment the sentence makes upon the topic "this country." Topicalizing by means of cleft structures is thus not a question of embedding, but rather it is a process of transforming in such a way as to yield referential prominence.

2. Nominal phrases are the next group of embeddings. Unlike nominal clauses, nominal phrases contain verbs in nonfinite (uninflected) forms, but they function in the same nominal positions as nominal clauses. The forms of nominal phrases are infinitive, gerund and derived noun. Some examples are:

a. *Tom's giving up in the last* lap surprised our coach. (Gerund phrase of occurrence, functioning as subject of "surprised")

b. *To change plans* now would be *to invite disaster.* (Infinitive phrases functioning as subject and as subject complement of "would be")

c. It would be difficult if not impossible *for Arthur to serve as president.* (Infinitive phrase functioning as subject of "would be," with the expletive "it" serving as the subject place-holder)

d. We were surprised by *Miss Brown's sudden erasing of the blackboard.* (Gerund phrase of action functioning as object of agentive preposition "by")

e. *The indoctrination of new employees* is an important part of a company's training procedures. (Derived noun phrase functioning as subject of "is")

f. A counselor brought about *Joan's reconciliation with her parents.* (Derived noun phrase functioning as object of "brought about")

g. The book tells people *how to keep their lives in order.* (Infinitive phrase in question form, functioning as object of "tells")

In most grammar books, derived noun phrases are not treated as embedded sentences, and the analysis presented here may seem unfamiliar. For example:

h. *The detective's original reconstruction of the crime* proved inadequate in the end.

On the one hand, the phrase is clearly related to the sentence "the detective reconstructed the crime," consisting of "detective," "reconstruct" and "crime" in the roles of subject, verb and objective, respectively. On the other hand, "reconstruction" also has the form of a noun, even if verbal and abstract, since it is modified by the adjective "original" and will pluralize. The procedure arbitrarily used by NAEP and many other researchers has been to credit the writer with an embedded sentence if either (or both) the subject or the object of the underlying sentential proposition remains in the derived noun phrase as written. If neither remain the phrase is considered a nonembedded simple noun. Thus, if the writer had written "the original reconstruction proved . . . etc.," the phrase would not be counted as a derived noun phrase or included among nominal embeddings.

Other structures that often cause confusion are infinitive phrases following verbs but not clearly functioning as nominals. For example:

i. The couple loved to walk through the park.

j. The group started to sing an old song.

Since these sentences do not passivize or cleft (that is, we cannot say "to walk through the park was loved by the couple," or "what the group started was to sing an old song"), we conclude that the underlined parts are not embedded nominal phrases, but rather that the verbs in the sentence are the complexes "loved to walk" and "started to sing," followed respectively by the nonembedded phrases "through the park" and "an old song."

Linguists also point out that phrases like the following are not nominal embeddings.

k. The doctor forced *Tom to stop smoking*.

l. Sam helped *Bill prepare for the race*.

Instead, the foregoing are termed "complement" sentences. They are true embeddings, but are not nominal in that they do not perform a recognized noun function. (The nouns "Tom" and "Bill" each perform dual functions, as objects of the verbs preceding them and subjects of those following.) NAEP's approach, based on research findings showing that use of complement sentences is not indicative of maturity, is to ignore complement embeddings altogether, treating them in effect as additional simple sentence patterns.

B. Modification

1. Adjectival

a. Relative clauses, sometimes more familiarly referred to as adjectival clauses, are the first modifying embeddings considered.

1) The bird *that you were telling me about* must have been a Baltimore oriole.

2) His aunt is one of those persons *who cannot live without a daily dose of gossip*.

3) They have found a way of life *which comes to few people in the modern world*.

4) Friends *with whom we can share our innermost thoughts* are rare and precious gifts.

The examples above are restrictive relative clauses that result from embedding. Nonrestrictive relative clauses, linguists believe, result from the conjoining of two sentences rather than from subordinate embedding. Since the forms of both kinds of clauses are similar, however, nonrestrictives may be tabulated with or apart from restrictives: NAEP chose to do the former.

5) Frankin Roosevelt, *who had contracted polio as a young man,* relied on swimming for his main source of exercise. (As stated above, this nonrestrictive relative clause results from the reduction of the

compound sentence "Franklin Roosevelt had contracted polio as a young man and he relied on swimming for his main source of exercise.")

6) The students nodded and snored intermittently throughout the lecture, *which caused the professor no end of consternation.* (Here the relative clause modifies the entire sentence, in a manner frowned upon by grammatical purists who insist that all relatives must modify a single stated noun.)

Relative clauses denoting time, place and manner also occur. These are traditionally labelled adverbial, but in form they are nonetheless relatives, and NAEP tabulated them under this heading. However, to enable analysis under either heading, relative or adverbial, NAEP coded these clauses as being of time, place or manner to set them apart from other relatives.

7) *When we returned from vacation,* we found that our neighbors had moved. (Relative clause of time)

8) The truck was parked *right where we needed to unload our car.* (Relative clause of place)

9) The judge instructed the jury *such that they could vote only for acquittal.* (Relative clause of manner)

Sometimes relative clauses are interrupted by what some grammarians have called parenthetical statements.

10) Finally he found a doctor *who he believed could cure his arthritis.*

Many grammar books consider "he believed" as an interrupting of parenthetical statement merely injected into the relative clause. But most linguists interpret such structures as relative clauses formed in such a way as to "raise" the relative pronoun ("who") up one level from the embedded nominal clause in which its antecedent occurs ("he believed *that the doctor could cure his arthritis*"). Raising can occur through several levels of nominal embedding, as in the sentence:

11) Then he mentioned a fairy story that Fran was almost certain she remembered her mother had told her she had acted out in a kindergarten play.

Here the relative pronoun "that," modifying the noun "fairy story" in the main clause, is raised from the sentence "she had acted out the fairy story in a kindergarten play" embedded four levels deep (that is, four sentences deep) within the main clause.

It is also necessary to distinguish relative clauses from nominal clauses when both begin with "that."

12) The students applauded *the announcement that school would close early.* (Nominal clause in restrictive apposition to "announcement")

13) The students applauded *the announcement that the principal made to open their assembly.* (Relative clause modifying "announcement")

Two tests differentiate nominal from relative clauses: if "that" can grammatically be replaced by "which," the clause is relative; second, if a form of "be" ("the announcement was that . . .") can sensibly be read between the head noun and "that," the clause is nominal.

14) . . . the announcement *was* that school would close early (but not "the announcement was that the principal made to open their assembly")

15) . . . the announcement *which* the principal made to open the assembly (but not "the announcement which school would close early")

Finally, the relative clause form, like the nominal clause form, is also used in a cleft transformation giving referential prominence to the modified noun.

16) It's preventive maintenance *that reduced accidents.*

b. Modifying phrases are the next group of embeddings. Relative clauses often appear in reduced forms, as modifying phrases. In fact, all phrases functioning as adjectival modifiers are reduced relative clauses, that is, clauses whose relative-pronoun subjects, and often also whose verbs, have been deleted, that is remain unexpressed in the written text. Here are some examples of reduced relative clauses functioning as modifying phrases.

1) The car *turning the corner* is going to explode. (Active participial phrase, reduced from "which is turning the corner")

2) The car *burned by the fire* disappeared. (Passive participial phrase, reduced from "which was burned by the fire")

3) The car *to win at LeMans* has just been designed. (Active infinitive phrase)

4) The car *to be auctioned next* is a lemon. (Passive infinitive phrase)

5) The car *in the showroom* is expensive. (Prepositional phrase)

6) The car, *a Lotus Ford,* was stolen. (Appositive noun phrase, reduced from a nonrestrictive relative clause "which is . . . etc.")

7) The car, *spotless and shiny,* sat unattended. (Coordinate, or conjoined, nonrestrictive adjectives in post-position)

8) The life *of a man* ("a man's life")
The top *of the house* ("the house's top")

The end *of the game* ("the game's end")
The edge *of the cliff* ("the cliff's edge")
(Genitive phrases, roughly transformable as possessives reduced from relative clauses of the form "the Y has an X.")

A noteworthy point about genitive constructions revealed by research on the development of written syntax is that, alone among modifying phrases and words, the use of genitives does not increase with age and thus is not critical of maturity. Accordingly, as indicated in the Outline of Syntactic Analysis given earlier in this guide, NAEP separately categorized genitive phrases such as those just shown, including them with the pre-noun modifying genitives named in the next section. In designing a syntactic analysis therefore, persons may choose either to include genitives with other modifying phrases and words, or to count them separately.

Generally speaking, the eight post-noun adjectival modifiers shown above, phrasal in form, represent the full range of types in which adjectival phrases may occur. Also, however, relative clauses of time and place may be reduced to phrases.

9) *When full,* cats fall into a deep sleep. (Relative phrase of time, reduced from the relative clause "when they are full")

10) We had luncheon *after swimming.* (Relative phrase of time, reduced from relative clause "after the time when we swam")

11) He keeps his funds *where convenient to his vacation travel.* (Relative phrase of place)

As with the relative clauses of time, place and manner, these phrases are customarily said to be adverbial and thus may be categorized in a way that separates them from adjectival modifying phrases.

c. Transposed modifying phrases are nonrestrictive modifying phrases placed in positions other than immediately following the nouns they modify. Their use is especially indicative of writing maturity. In form they may be appositive noun phrases, active and passive participial phrases, gerundive phrases, coordinate adjective phrases or absolute phrases (noun phrase followed by participial phrase). Like other nonrestrictive elements, transposed modifying phrases result from the conjoining of sentences. Some examples are:

1) He stood on the corner and he watched the procession approach. (Compound sentence)

Standing on the corner, he watched the procession approach. (Compound sentence reduced to participial phrase, as transposed modifier)

2) George cleaned out his desk, and in the process he discovered his lost pipe cleaners. (Compound sentence with "in the process" conjunction)

In cleaning out his desk, George discovered his lost pipe cleaners. (Compound sentence reduced to "in the process" gerundive)

3) The bear turned at bay, and his fangs were bared for attack. (Compound sentence)

The bear turned at bay, *his fangs bared for attack.* (Compound sentence reduced to absolute phrase, traditionally termed nominative absolute)

4) Babe Ruth was a pitcher at the start of his career, but he is remembered today as one of the baseball's greatest hitters. (Compound sentence)

A pitcher at the start of his career, Babe Ruth is remembered today as one of baseball's greatest hitters. (Compound sentence reduced to appositive noun phrase, as transposed modifier)

d. Pre-noun modifiers are described next. When relative clauses are reducible to a single term, that term positions itself ahead of the noun modified. Here then is the list of pre-noun, single-term adjectival modifiers, which are reductions of relative clauses.

1) The *expensive* car disappeared. (Adjective, reduced from "which was expensive")

2) The *plastic* car disappeared. (Substance noun, reduced from "which is made of plastic")

3) The *gleaming* car disappeared. (Active participle, from the relative clause verb)

4) The *souped up* car disappeared. (Passive participle, reduced from the relative clause "which was souped up," which in turn is formed from the passive inversion of "someone souped the car up.")

5) The *prize-winning* car disappeared. (Participial compound, reduced from "the car which wins prizes")

6) The *company's* car disappeared. (Genitive, or possessive, modifier, reduced from "the car which the company owns." Like all genitives, it may also occur, though awkwardly, in its phrasal, or periphrastic form, "the car of the company." As mentioned earlier since genitives do not indicate maturity, NAEP classified them separately).

Also, the English language permits the formation of compound nouns consisting of a noun head preceded by a stressed adjunct, which may be a noun, an adjective or

a verb. The adjunct and the head taken together form what is, in effect, a "new" noun, called a compound noun. Examples:

7) A *buss bomb* sailed overhead. (Verb adjunct "buzz," in a compound noun presumably formed by reduction of the relative clause "a bomb which buzzes.")

8) A *cable car* came into sight. (Noun adjunct "cable," the compound presumably formed by reduction of "a car which is run by a cable")

9) A *wise guy* spoke up. (Adjective adjunct "wise," the compound presumably formed by reduction of "a guy who is wise," intended, of course, ironically)

2. Adverbial

a. Adverbial clauses other than relative clauses of time, place and manner occur in the semantic categories of reason, condition or concession.

1) I get very wet *because I don't have a raincoat.* (Adverbial clause of reason, specifically cause)

2) He shut the door *so the bugs couldn't get in.* (Adverbial clause of reason, specifically purpose)

3) *If it rains all day,* I'll be very unhappy. (Adverbial clause of condition)

4) I don't like to stay home *unless I have some games to play.* (Adverbial clause of condition, negative)

5) The party was a success, *although the food ran out.* (Adverbial clause of concession)

b. Adverbial phrases result from the reduction of adverbial clauses, and occur in the same semantic categories.

1) *Because of the flood* the crops rotted. (Adverbial phrase of cause)

2) He stopped his ears *to block out the sound.* (Adverbial phrase of purpose)

3) Persons should apply early *if interested in the position.* (Adverbial phrase of condition)

4) *Though young,* she became President. (Adverbial phrase of concession)

III. Identification of Conjoinings

A. Coordinate

Turning from embedding to conjoining, NAEP first tabulated instances of intra-T-unit, grammatically coordinate conjoining. This included any use of "and" (additive or coordinate) or "or" (disjunctive). Virtually every element in a T-unit can be coordinately conjoined to another of its kind, whether

they be subjects, verbs, objects, entire predicates, clause-length embeddings (either nominal or adjectival), or phrase or single-word reductions of clause-length embeddings. In tabulating instances of intra-T-unit conjoinings, NAEP counted the occurrences of "and" and "or." For example, a count of one was made in the case of coordinated noun phrases, a count of two for coordinated noun phrases and coordinated verb phrases, and so on. A further approach would be also to count the number of elements involved in each instance of conjoining. For example, in tabulating each conjoining, two could be counted for paired conjoining ("Jack and Jill went up the hill"), three for three-member conjoining ("Jack, Jill and Mike went up the hill"), and so on. The sum of these numbers will equal the number of sentence-like propositions joined by conjunction.

b. Semantic

The second type of conjoining, called semantic or logical conconjoining, operates both within (intra-) and between (inter-) T-units.

1. Intra-T-unit

a. Comparative conjoinings, different from coordinate, link two sentences to show more or less than, or equal to, in forms that may be clausal or phrasal in their first structure.

1) In two hours John ran exactly *as* far *as Bill could walk in a day.* (Clause of comparison, equal to)

2) This book is harder reading *than that one.* (Phrase of comparison, more than, sometimes referred to as an "elliptical" clause of comparison)

3) Tom is *less* good looking *than his brother.* (Phrase of comparison, less than)

Comparative conjoining also links pairs of sentences in instances where the second number of the pair states the the degree or standard of comparison, often implied.

4) Mary was *so* surprised *that she became hysterical.* (Phrase of comparison, surprised to a degree equal to or greater than that required to induce hysteria)

5) Frank was *too* sleepy *to study another minute.* (Phrase of comparison, degree of Frank's actual sleepiness compared with degree of that beyond which he could not study another minute)

Traditionally, in school grammars at least, clauses of comparison have been called adverbial. There is no harm in continuing to do so, if one remembers that comparative structures result from the conjoining of separable sentences, and differ in form from all other kinds of adverbials. NAEP's analysis does not report comparative conjoinings.

b. Intra-T-unit conjoining in the semantic categories of reason, condition and concession, as noted elsewhere in this report, while traditionally identified as adverbial (subordinate) elements, may alternatively and quite correctly be included here.

2. Inter-T-unit

Whole T-units may be conjoined semantically by a coordinating conjunction ("and," "or" and "nor") as well as by connective words usually called conjunctive adverbs. Six categories of inter-T-unit semantic conjunction may be identified.

a. Additive/sequential

- and

b. Disjunctive

- or, nor

c. Intensifying additives

- furthermore
- moreover
- what's more
- in fact
- in addition

d. Sequentials

- then
- next
- after that

e. Adversatives

- but
- despite
- however
- then again
- instead
- nevertheless

f. Illatives

- thus
- so
- therefore
- consequently

Many other phrases and "signpost" terms are used to make connections and transitions between T-units. For the most part they do not fit under category headings, but are easily recognizable as inter-T-unit connections, for example: in any case, at least, on the other hand, in other words, for example, that is, after all, etc. A general heading such as "unclassified conjunctives" may be employed to list those terms, whose increased use is definitely characteristic of more mature writing. Since NAEP was mainly interested in numbers of conjoinings rather than specific classifications, inter-T-unit

conjoinings were coded into three broad categories--additives and disjunctives, adversatives and illatives, and other "signpost" terms including intensifying additives, sequentials and comparisons.

Part Two: Guidelines for Rating Cohesion

Background Information About Cohesion

The term "cohesion" refers to the various ways in which writers gather and order ideas. Attempting to describe cohesion per se is something new to the writing assessment, and it is important to understand what this procedure is and why it is being used. The roots of NAEP's decision to rate cohesion lie in the traditional practice of examining essays for paragraphing. In 1969-70 when NAEP first developed its procedures for characterizing essays, paragraphing errors and paragraph development were part of that system. For the second assessment, the system was modified so that every paragraph could be classified into one of the following three categories.

1. Paragraph used indicated that the paragraph was, essentially, only a visual device. The writer used indentation, skipped a line or stopped in the middle of a line and started back at the margin, but the paragraph was neither coherent nor developed. The one sentence paragraph generally was placed in this category.

2. Paragraph coherent indicated an interconnectedness among sentences and among the ideas of those sentences. The relationship of each sentence's idea to the ideas that preceded and followed it was clear. When reading a coherent paragraph, a reader should never be confused about the order of its parts or their relationship to each other. Paragraphs that were overdeveloped--that is, contained two or more developed sections--were marked coherent.

3. Paragraph developed indicated that the paragraph had an explicit or an implied topic sentence, which identified and limited the central area of concern in the paragraph, and that each additional sentence, in an orderly manner, added to, or explained something about, the main idea embodied in the topic sentence.[2]

When the results of the study describing changes in performance across two points in time were analyzed, it was found that there was an overall

[2]It should be noted that the exercises used in the second assessment study, although released, were readministered in the third assessment. The paragraph scoring procedures outlined above were replicated as part of this order investigation of changes in writing across three points in time.

decline in the quality of the essays from the first assessment to the second-- most likely as a result of increases in awkwardness, run-on sentences and incoherent paragraphs.[3] In view of these findings, NAEP's external writing consultants felt that the aspect of coherence deserved special consideration and that a more thorough method would be appropriate to analyze differences in writing coherence across three points in time.

In addition, there was some concern about the procedure of using paragraph markings as a measure of coherence. For example, an essay consisting of five indented sentences may have been scored as having five paragraph errors using the second-assessment system, regardless of whether several of the sentences were linked or not. Conversely, as noted, an essay consisting of three well developed paragraphs that were not visually structured as paragraphs was categorized as having only one paragraph, since it looked like it had only one. NAEP was describing not only the ability to write coherent and developed paragraphs, but also the ability to depict them appropriately on paper. It was felt that, given a testing situation, perhaps these guidelines were inappropriate and that the assessment could provide more useful information by concentrating on the linkages of ideas present in the essay, regardless of how the paragraphs might be visually displayed.

According to current practice in writing research, such an examination of idea linkages is termed cohesion analysis. Today's research on cohesion represents a fresh inquiry into aspects of writing that have long interested grammarians. Many researchers are attempting to describe the ideational structures of discourse using units larger than the sentence. The units or sections of interest (variously termed topics, levels, comments, rhemes, blocs, etc.) often lack physical representation in the text. Attention is focused instead on an analysis of the devices by which ideas are linked and are carried forward from one sentence to the next within any piece of connected discourse.

Cohesion analysis concentrates mainly upon two different things. One of these is semantic conjunction, that is, the joining of entire T-units

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[3] See Writing Mechanics, 1969-74: A Capsule Description of Changes in Writing Mechanics, Writing Report No. 05-W-01, available from National Assessment of Educational Progress.

and sentences by words establishing various semantic relations between them, such as cause ("because"), concession ("although"), sequence ("then"), logical conclusion ("therefore"), and so on. The second focus of cohesion analysis is what linguists call devices of continuing mention, sometimes termed back reference or anaphora. Here are some examples: lexical renaming ("Some men and women left early. These persons . . ."); pronominal reference ("Then the officers arrived. They . . ."); pro-form substitution ("My new skates were stolen so I had to use my old ones."); and ellipsis ("He usually runs a mile before breakfast, but today he didn't [_____]."). Overall, when the devices of cohesion are appropriately utilized throughout an entire piece of writing, the piece is said to cohere, that is--a condition of coherence is said to result.

In developing its procedures for measuring cohesion in writing, NAEP referred to the work of linguists Halliday and Hasan.[4] In Cohesion in English, they describe an analysis procedure in which both the incidence (number of occurrences) and distance from an earlier mentioned item (referent) are identified for various types of cohesive ties. The five major classifications of cohesive ties they suggest identifying are those named above and illustrated further on page 27--lexical, re-naming, semantic conjunction, pronominal reference, pro-form substitution and ellipsis. However, Halliday and Hasan's analysis in its entirety includes over one hundred subcategories.

NAEP did not have the resources to conduct such an elaborate analysis (even utilizing only five categories) of the approximately six thousand papers that constituted the national samples included in the three-assessment study. Thus, although such an analysis is obviously possible, NAEP's basic approach to cohesion is not to identify and enumerate actual cohesion ties present in pieces of writing. Instead, NAEP has constructed a 4-point scale on which readers trained in the recognition of cohesion ties subjectively evaluate each essay as a whole, according to the extent to which it has utilized and arranged such ties to achieve a pattern of coherence throughout the entire essay. Roughly, the scale ranges from little or no evidence of cohesion, to gathering of details without

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[4] Halliday, M. A. K. and Ruqaiya Hasan, Cohesion in English (London: Longman Group Ltd., 1976).

meaningful ordering, to gatherings and orderings into sections that fail to cohere to one another, and finally to coherence throughout the entire essay.

As shown in Part One of this publication, NAEP's syntactic analysis tallied the strategies of semantic conjunction used to connect T-units. These procedures are explained on pages 20-22. Finally, while the four cohesive strategies of continuing mention (back reference) were not tabulated for the full samples of essays, NAEP did conduct a small pilot study (180 papers) utilizing a majority of the analytical strategies suggested by Halliday and Hasan.[5] The study included an incidence and distance analysis of all five major categories, as well as many subcategories.

The scoring guide for cohesion is given in the next section of this document. Readers should bear in mind that the present guide is a "first" for National Assessment and is subject to modification in the future. The cohesion guide is certain to be developed further, and the subjective approach may be partially or even totally supplanted by a more analytical description of tabulation. To date, as discussed above, NAEP has basically limited cohesion scoring to the subjective rating of entire essays on a 4-point scale. Scorers were provided with the following guide, which included an example essay illustrating the highest cohesion score and several illustrations of each of the five kinds of cohesive ties.

Cohesion Scoring Guide

In scoring essays for cohesion, one must be attentive not only to the incidence of cohesive ties but also to their successful ordering. Underlying and further strengthening these ties is syntactic repetition, both within and across sentences. The following example achieves cohesion by lexical cohesion, conjunction, reference and substitution, and yet these various kinds of cohesion are both emphasized and related among themselves by numerous incidents of syntactic repetition.

[5]The portion of this study involving which specific ties to identify, as well as the supervision of the actual coding of specific ties, was contracted to Charles Cooper, then at the State University of New York at Buffalo, currently at the University of California at San Diego.

A rainy school morning makes me feel awful. I feel like being mean to my brothers for no reason. On a rainy morning the whole world seems against me. I wake up on the wrong side of the bed and I'm grouchy. On a rainy school morning nothing goes right. I'm late for breakfast, slow in getting dressed and usually I forget something I need for school.

When both the incidence and ordering of cohesive ties pattern the entire piece of writing, the writer has created what we ordinarily call coherence. Following are the descriptions of the four score-points on NAEP's standard cohesion-scoring scale.

1 = Little or no evidence of cohesion. Basically, clauses and sentences are not connected beyond pairings.

2 = Attempts at cohesion. There is evidence of gathering details but little or no evidence that these details are meaningfully ordered. In other words, very little seems lost if the details were rearranged.

3 = Cohesion. Details are both gathered and ordered. Cohesion is achieved in the ways illustrated briefly in the definition above. Cohesion does not necessarily lead to coherence, to the successful binding of parts so that the sense of the whole discourse is greater than the sense of the parts. In pieces of writing that are cohesive rather than coherent, there are large sections of details which cohere but these sections stand apart as sections.

4 = Coherence. While there may be a sense of sections within the piece of writing, the sheer number and variety of cohesion strategies bind the details and sections into a wholeness. This sense of wholeness can be achieved by a saturation of syntactic repetition throughout the piece (see description example above) and/or by closure which retrospectively orders the entire piece and/or by general statements which organize the whole piece.

Sometimes a written response cannot be categorized. When a paper is so undecipherable that it cannot be intelligibly interpreted by a reader, it should be designated as illegible and receive no further scoring. Also, when a writer simply copies the exercise stem, or in some other sense does not respond to the assigned writing task, the response should be categorized as inappropriate for analysis and receive no further scoring. Blank papers can be designated as such.

In using the scale, readers should not take machanics or transcription errors into consideration. Also, readers should judge only the interrelatedness of the ideas, NOT the quality of those ideas.

In general, "cohesion" refers to the ways clauses and sentences are related to each other, and can be thought of as the gathering and ordering of related ideas. If the parts of a discourse cohere, they "stick" or are "bound" together. Cohesion is achieved by ties of considerable variety, and these ties can be both semantic and structural. Additional examples of the specific kind of cohesion ties identified by Halliday and Hasan are:

Lexical Re-naming

I like *rain* on school days but I dislike *rain* on weekends.

I stepped right into a puddle. That *puddle* was a complete surprise to me. That *muddy hole* ruined my day. That *place* fooled me.

Semantic Conjunction

Additive: It was a muggy day *and* I couldn't stay awake.

Adversative: I really didn't feel like going to school in the rain, *but* I did anyway.

Causal: I love rainy school days *because* my mom always lets me stay in bed.

Temporal: I put on my raincoat *when* it rains. *Then* I put on my plastic hat. *Finally*, I get myself out the door.

Pronominal Reference

Personal: Rainy mornings are never fun for kids. *They* get wet waiting for the school bus.

Demonstrative: I feel sad on rainy school mornings. *That* feeling is one I don't like.

Comparative: Today's the same kind of rainy day *as the one* we had yesterday.

Pro-form Substitution

Nominal: I couldn't find my yellow rain coat, so my mom told me to take the other *one*.

Clausal (use of *so* and *not*): Was it going to rain all day? The weatherman said *so*.

Ellipsis

Nominal: This was not the first rainy day I'd stayed in bed, only the second ( ).

Verbal: I usually stay in bed on rainy mornings, but I didn't ( ) this time.

Clausal: I could either stay in bed or get up and go to school, but I couldn't decide which ( ).

Users of this scoring guide may wish to develop their own approaches to the identification and tabulation of these and other specific cohesive ties.

Part Three: Guidelines for Categorizing Mechanics and Grammatical Errors

Background Information About Mechanics

National Assessment consultants feel, as stated in the 1973-74 objectives booklet, that "mechanical correctness should not be the sole criterion for evaluating a piece of writing." Nevertheless, it can be argued that without mastery of mechanics, a writer will not communicate successfully. NAEP recognizes that the concrete and specific information provided by descriptive scoring of grammar and mechanics can be quite useful to teachers, curriculum developers and researchers.

Since the first writing assessment conducted in 1969-70, NAEP has routinely measured mechanics skills. For papers collected in the 1969-70 assessment, NAEP counted mechanical errors and characterized papers based on their types of correct or faulty sentence constructions. In preparation for the 1973-74 writing assessment, the 1969-70 mechanics scoring guide was amplified to provide educators with more concrete information about student writing. Specifically, in addition to counting word-choice, spelling and capitalization errors, NAEP tabulated sentences both in terms of acceptable constructions (simple with phrase, compound, complex, etc.) and those based on punctuation errors (fused, on and on, comma splice and incorrect fragment). In addition, each sentence received additional codes if it contained an awkward construction or an error in agreement. Punctuation errors of omission and commission were coded for commas, dashes, quotation marks, semicolons, apostrophes and end marks.

The 1973-74 mechanics and grammar categorization scheme was used to help analyze changes in writing performance between the first two writing assessments. For each age, 9-year-olds, 13-year-olds and 17-year-olds, a national sample of papers written in response to the same essay tasks was selected from each assessment cycle. Tabulations collected by trained

readers were compared and reported in the NAEP publication Writing Mechanics, 1969-74.[6]

On the basis of the 1973-74 effort, the mechanics and grammar categorization gudielines were once again modified, although only slightly, in preparation for use as part of the scoring effort of the 1978-79 writing assessment. After the results of the 1973-74 assessment were analyzed, increases in occurrences of awkward constructions suggested that this category should be refined to provide more comprehensive and useful information. Thus, the present guidelines identify four types of faulty sentence construction--faulty parallelism, unclear pronoun reference, illogical construction and other dynfunctional construction.

Conversely, results of the analysis of separate categories of spelling errors and word-choice errors indicated that the 1973-74 procedures were not particularly productive. In that scoring effort, spelling errors were categorized as:

1. Reversal--This type of misspelling is frequently the result of a perception problem. The student may reverse a letter by writing it backwards (b/d) or upside down (m/w, b/p, u/n), or may reverse the order of letters in a word (was/saw).
2. Plural--A plural is not formed or is formed incorrectly.
3. Phonetic Attempt--A word is spelled incorrectly in a manner that reflects the correct pronunciation of the word.
4. Other Spelling Error--This category included incorrect word divisions at the end of a line, making two words into one, making one word into two, and groups of letters that are not legitimate words.

Results indicated that spelling errors were not frequent enough to merit using limited resources on such fine categorizations. Even though the 17-year-olds in 1974 who wrote the papers receiving the lowest overall ratings did misspell almost 12 percent of the words in their papers, other writers exhibited a much lower incidence of misspellings. Also, it was found that many of the spelling errors that did occur were being classified into the "other" category. Finally, considering the relative usefulness of the information, the scoring was unnecessarily complicated.

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[6] Writing Mechanics, 1969-74: Capsule Description of Changes in Writing Mechanics, Writing Report No. 05-W-01, October 1975. See page 1, footnote 1.

Perhaps the most complex decision a reader of mechanics has to make is when a "misspelling" is in fact a spelling mistake and when it is an inappropriately used word. The reader can only look at the context of the word in the sentence and try to make his or her best determination of the cause of the error. Errors resulting from homonym confusion are perhaps the worst case, and the addition of a "phonetic attempt" misspelling category complicates matters even further. Because of these problems, all spelling errors were coded to a single misspelled-word category in the 1978-79 analysis.

The final modification from 1973-74 to 1978-79 was the deletion of the category of word-choice errors involving structure words, that is, errors resulting from use of the wrong preposition or conjunction. In 1973-74, these types of word-choice errors were categorized separately from other word-choice errors. In 1978-79, all word-choice errors were coded to a single category. The separation of word-choice errors into two categories was not particularly difficult for readers. However, the infrequent occurrence of word-choice errors (generally, less than one percent of the words used), and the fact that very few of these errors were structure-word errors, indicated that the distinction did not provide particularly useful information.

1978-79 Guidelines for Grammar and Mechanics Categories

The following guidelines are presented in two parts. The first concerns the categorization of sentences and the second, the categorization of words.

It should be noted that these descriptive guides were developed to allow writers as much flexibility as possible under existing rules of correct writing; consequently, any time two authorities on mechanics disagreed, the more informal interpretation was used.

Again, there are times that a written response cannot be categorized. When a paper is so undecipherable it cannot be intelligibly interpreted by a reader, it is designated as illegible and receives no further scoring. Also, when a writer simply copies the exercise stem, or in some other sense does not respond to the assigned writing task, the response is categorized as inappropriate for analysis and receives no further scoring. Blank papers can be designated as such.

Sentence Level Categorizations

I. Type of Sentence Construction

Each sentence is first categorized as to type--either as one of seven types of acceptable sentence constructions or as one of four sentence constructions resulting from a punctuation error. As explained in Part One on page 8, acceptable constructions are categorized in order to provide some minimal information about syntactic ability. However, any level of syntactic analysis would provide superior measures. If one's purpose is not to collect information about syntactic ability, or if ore is using the more sophisticated approach of a T-unit analysis, one should disregard these categories. NAEP does not actually code these categories, but retrieves the information from the syntactic ability analysis tabulations. Also, it should be noted that the incorrect constructions categorized as fused, comma splice, and "on and on" all constitute run-on sentences. Thus, these three categories could easily be collapsed when tabulating sentence errors.

A. Sentence Types--Acceptable Constructions

1. Correct fragment (minimal sentence). A word group used in dialogue for emphasis or as an exclamation, but is not an independent clause.

2. Simple sentence. A sentence that contains a subject and a verb. It may also have an object or a subject complement.

3. Simple sentence with phrase. Any simple sentence that also contains a phrase, regardless of the phrase's function in the sentence. Phrases are defined as any closely related group of words that do not contain both a noun and a verb. They include prepositional, infinitive, gerundive and participial phrases, as well as appositives, nominative absolutes and verbals.

4. Compound sentence. A sentence that contains two or more simple sentences joined by something other than a comma.

5. Compound sentence with phrase. A compound sentence that contains at least one phrase in one of the independent clauses.

6. Complex or compound-complex sentence. A sentence that contains at least one independent clause and one dependent clause. A dependent clause is defined as a group of words that cannot stand alone as a sentence, but contains both a subject and a verb.

7. Complex or compound-complex sentence with phrase. A sentence that contains at least one independent clause, one dependent clause and one phrase.

B. Sentence Types--Constructions that contain punctuation errors. (These sentences do not fall into any of the preceding categories.)

1. Fused. A sentence that contains two or more independent clauses with no conjunction or punctuation separating them. If, however, the first word of the second independent clause is capitalized, each sentence should be scored separately and the first sentence given an end mark error. Also, if a sentence is scored as fused, it should not also be given a semicolon error since that would be categorizing the same error twice.

2. On and on. A sentence that consists of four or more independent clauses strung together with conjunctions, a conventional mark of punctuation or a combination of both. The conjunctions need not all be the same.

3. Comma splice. A sentence that contains two or more independent clauses joined by a comma rather than a semicolon or a coordinating conjunction. Again, if the first word of the second independent clause is capitalized, categorize each sentence separately and give the first sentence an end mark error. Sentences that contain three independent clauses with two spliced are categorized as a comma splice.

4. Incorrect sentence fragment. Any word group, other than an independent clause, that is written and punctuated like a sentence is an incorrect sentence fragment. However, when the subject of a sentence is understood it should be considered complete.

II. Faulty Sentence Construction

Each sentence is examined to see if it has an agreement error and/or an awkward construction. As mentioned in the background section of these guidelines, the categorization of specific types of awkward construction is a refinement incorporated into the guidelines for use with the third assessment study. Since NAEP did find increases in awkward constructions from the first assessment to the second assessment, it was felt that a more detailed categorization of awkward constructions would provide useful information. However, there is no other particular reason why it would not be valid to record all awkward constructions in one category.

A sentence is categorized as an agreement error if it contains at least one agreement error and as an awkward construction if it has at least one awkward construction. Thus, a sentence can be classified both as awkward and containing lack of agreement. Using the NAEP system, each sentence can have a maximum of three categorizations--one for its basic type of construction, one for containing agreement errors, and one if it is awkward.

A. Agreement. A sentence is categorized as having an agreement error if at least one error is present. Multiple errors are not scored using NAEP guidelines, as it becomes tempting to categorize one disagreement as two errors. However, if it is clear that two separate agreement rules have been disregarded, it would be possible to categorize sentences as having multiple agreement errors.

1. Rules used for subject/verb and pronoun/antecedent agreement are:

   a. A compound subject with an "and" takes a plural.

      EXCEPTION: Compound subjects connected by "and" but expressing a singular idea take a singular.

   b. A collective noun takes a singular when referring to the group as a unit but takes a plural when the members are active as individuals.

   c. Some nouns are written as plurals but have a singular meaning. When used as subjects, they take a singular. Other nouns written as plurals have a singular meaning and when used as subjects, take a plural:

proceeds	trousers
scissors	pants
goods	

   d. Some nouns have the same form in the plural as in the singular. These nouns take the singular or the plural depending on the context of the sentence.

      EXAMPLES: The series of concerts look exciting.
      Both series of concerts look exciting.

   e. Many nouns ending in "ics" (economics, statistics, politics, ethnics, etc.) take a singular or plural depending on how they are used. When they refer to a body of knowledge or a course of study, they are singular. When they refer to qualities or activities, they are plural.

   f. A title is singular.

      EXAMPLE: <u>The Canterbury Tales</u> is a comedy.

   g. After who, which or that, the verb must agree with the clause's antecedent--the noun to the left of who, which or that.

   h. Time, amounts of money and quantities are singular.

   i. When a phrase is the subject of a sentence, a singular verb must be used.

2. Rules used for noun/modifier agreement are:

   a. "A" is used before all consonant sounds, including sounded "h"--a house, long "u"--a unit, and "o" with the sound of a w--a one-week workshop.

   b. "An" is used before all vowel sounds, including silent "h"--an hour, short "u"--an umpire.

      NOTE: If the word is misspelled and the modifier agrees with the misspelling, an agreement error is not scored--an umble man, an ouse.

3. Rules used for subject/object pronoun usage are:

   a. Subject pronouns--I, you, he, she, it, we, they, who--are used when the pronoun is the subject of a verb.

   b. Object pronouns--me, you, him, her, it, us, them, whom--are used when the pronoun is the direct object, the object of the preposition or the subject or object of an infinitive.

4. Rules used for tense shifts within an independent clause are:

   a. Use present perfect with present or present progressive.

   b. Use past perfect with past or past progressive.

   c. Use future perfect with future or future progressive.

   d. Definitions of tenses:

      1) Present tense--happening now.

      2) Past tense--happened any time in the past.

      3) Future tense--will happen any time in the future.

      4) Present perfect--refers to an action that was completed in the past but is part of a series of actions that the writer assumes will continue in the present.

      5) Past perfect--refers to an action that was completed in the past before another event occurred.

      6) Future perfect--refers to an action that will be completed by a specific time in the future.

      7) Present progressive--refers to an action that <u>is</u> in progress.

      8) Past progressive--refers to an action that <u>was</u> in progress.

      9) Future progressive--refers to an action that <u>will</u> be in progress.

B. Awkward. Examine each sentence to see if it contains an awkward construction. Again, multiple faults are not scored using NAEP guidelines, as it is often tempting to double -and even triple-score some sentences. A sentence is placed in only one of the four awkward categories. (If it were very clear that a sentence did contain, for example, both a faulty parallelism and unclear pronoun referent, then it would be possible to place it in both categories.)

   In categorizing sentences for awkward constructions, do not edit a sentence. By correcting punctuation, correcting word choice and correcting agreement errors it is often easy to "fix" an awkward sentence. In doing this, you may be forcing an interpretation the writer never intended. Code what you see or what you would like to see. If a sentence can be edited several different ways, and the various choices involve different words, it should

be placed in an awkward category. It may be advisable to check a sentence for a conjunction word-choice error before categorizing it as awkward.

The categories of awkward constructions are presented in their order of precedence. For example, if a sentence should contain faulty parallelism and an unclear pronoun reference, it would be categorized as faulty parallelism, a sentence containing an unclear pronoun reference and an omitted word would be categorized as unclear pronoun reference, and so forth.

1. Faulty parallelisms are sentences that express two or more ideas in a manner that renders the parallel dysfunctional.

   a. Structural dysfunction--Two or more ideas connected with a coordinating conjunction or by either-or, neither-nor, not-but, not only-but also, or both-and are not constructed similarly (phrases, clauses, gerunds, infinitives, etc.). For example, "Neither is the bird able to swim nor learning eagerly."

   b. Semantic dysfunction--The parallel between two or more ideas is grammatically correct but semantically inappropriate. Some examples: "On a rainy day I felt sad, gloomy, depressed and happy." "When we walk to school, we jump in puddles, play tag and ride the school bus." "The bird is white and we had a fish for dinner."

   c. Verb tense shift--When the writer inappropriately shifts from one tense to another tense across independent and dependent clauses in the same sentence. For example: "Because I looked out the window, I see it is raining."

2. Unclear pronoun references. A categorization determined by the context of the written response. If a pronoun referent is not clear by referencing either within the sentence or back referencing to preceding sentences, it should be categorized as containing an unclear pronoun reference. (An expletive, "it" or "there," has no referent and should not be categorized as unclear.)

3. Illogical constructions are sentences that contain faulty or ambiguous modification. Also, functionally misarranged or misproportioned sentences are categorized here. Frequently, these sentences must be considered in the context of the rest of the written response. There may be cases where the important information has somehow been underemphasized. A wide separation of subject and verb, parts of a verb, or verb and object may result in this type of sentence.

4. Other dysfunctions are sentences with extra words, omitted words or awkwardly split infinitives.

   a. Two similar adjectives, as in--the big, huge river.

   b. Double negatives.

c. Redundancies, as in--"where is it at?"

d. Part of the verb (auxiliary or main) is missing, the subject is missing, the entire verb is missing.

e. Split infinitives are modifiers inserted between "to" and the verb form that may confuse the reader. For example: "It was impossible to even see a foot ahead." There are occasions when splitting an infinitive produces the smoothest sentence. Use your judgment and give the writer the benefit of the doubt.

NOTE: Do not spend a lot of time trying to pinpoint problems. If a sentence has trouble, but does not fit readily into one of the preceding categories, code it as "other." Also, if you cannot decide how to code a sentence in order to "fix" it, it should simply be placed in this category. For example: "They have a lots of money."

III. Punctuation

In the following guidelines, errors of commission and errors of omission are coded separately for commas, dashes, quotation marks, semicolons, apostrophes and end marks. Punctuation errors that are not defined in the guide are disregarded (ellipsis, parentheses, quotations that continue across paragraphs, use of single and double quotes, etc.). The guidelines were developed based on the most informal rules of usage. Credit should always be given for use of appropriate punctuation even if it is the least-sophisticated choice. Generally, try to give the writer the benefit of any doubt. Do not double-code fused, on and on, and comma splice sentences as containing colon, semicolon or end mark errors. End marks may be coded if the run-on sentence occurs at the end of the essay or the next sentence begins with a capital letter.

A. Commas and Dashes

1. A series of three or more nouns, verbs, phrases or dependent clauses must be separated by commas. <u>The comma before the conjunction is optional unless the items in series are dependent clauses</u>.

There should be no comma after the last word in a series unless a complete sentence follows. In this case, however, a dash is more acceptable.

If the series occurs within a sentence that is complete without it, a dash must precede and follow the series.

If there is a coordinating conjunction between each item in the series, there is no punctuation.

2. Two or more equal adjectives must be separated by commas if there is no coordinating conjunction. There is no comma between the last adjective and the noun it modifies.

3. A nonrestrictive modifier--appositive, phrase or clause--must be set off from the rest of the sentence with commas. A nonrestrictive modifier describes and adds information but does not point out or identify; the sentence does not change radically or become meaningless when the modifier is omitted.

4. Commas must precede and follow titles and degrees (when they follow a name), and they must follow elements in dates, places and addresses.

   Roman numerals are not punctuated.

   The comma between a month and a year is optional when there is no date. But, if there is one after the month, then there must be one after the year.

5. Commas must separate a noun in direct address from the rest of the sentence.

6. When a dependent clause, gerund phrase or absolute phrase starts a sentence, it must have a comma after it.

7. When a long (arbitrarily, five or more words) prepositional phrase starts a sentence, it must be followed by a comma. If it is short and there is no possibility of confusion, the comma is optional.

8. Separate mild interrupters from the rest of the sentence with commas.

   Mild interrupters may be parenthetical expressions (by the way, on the other hand, in my opinion), transitional words (nevertheless, consequently, therefore, however), well, yes, no at the beginning of a sentence.

   NOTE: The benefit of the doubt is given with well, yes and no at the beginning of a sentence. If the writer omits the comma and the meaning is clear, a comma is not required.

9. Dashes indicate a sudden change of thought in a sentence.

10. Dashes indicate a summarizing thought or an afterthought added to the end of a sentence.

11. A transitional expression preceded by a colon, semicolon, comma or dash is followed by a comma.

B. Quotation Marks

1. In dialogue, quotation marks must go around what is said. Separate who said it from what is said with commas. Periods and commas go inside quotation marks and must be clearly inside or this is an error.

2. If one set of quotation marks is present, there must be two. This is marked as one error. Location of quotation marks other than for dialogue is the writer's prerogative.

   NOTE: It is not considered an error if single marks are used instead of double marks.

C. Colon

1. A complete sentence introducing a series must have a colon after it.

2. When an introductory statement contains anticipatory words ("the following," "as follows," "these," "thus," etc.), there must be a colon before the series.

3. A colon must be used if the series is listed on separate lines.

4. Use a colon when a formed quotation is introduced without using a form of the verb "to say."

   NOTE: The benefit of the doubt is given in other cases of colon use. A writer does not receive a punctuation error unless it is clearly incorrect.

D. Semicolon

1. If a compound sentence has commas in both of the independent clauses, a semicolon must precede the conjunction.

2. If a comma is used for one rule in a sentence and if a comma is needed for a second rule but to use it would cause confusion, a semicolon must be used for the rule that creates the longest pause. (The comma after the connector is optional.)

   NOTE: In cases where the semicolon is missing, the student is not scored for a punctuation error as this is done when the sentence is designated as fused.

   If a compound sentence had a comma in one of the independent clauses, the writer could have used a semicolon, comma or no mark at all preceding the conjunction without being scored for an error.

E. End Marks

1. Every "sentence" must have some type of end punctuation if the next "sentence" starts with a capital letter.

   NOTE: End punctuation is not scored for appropriateness.

   If the writer omits end punctuation but begins the next sentence with a capital letter, a punctuation error is scored rather than a fused sentence.

   If there is no end mark following a fragment, the error is not scored unless the fragment occurs at the end of the essay.

F. Apostrophe

1. An apostrophe s ('s) is used to form the possessive of nouns, singular or plural, not ending in s.

2. Use 's or ' to form the possessive of singular nouns ending in s.

   NOTE: The benefit of the doubt is given in this category, particularly in cases concerning proper names.

3. Use ' without s to form the possessive of plural nouns ending in s.

4. Use 's to form the possessive of indefinite pronouns.

5. Use 's with the last noun to show joint possession in a pair or series.

   Use 's with each noun in a pair or series when each noun is possessing something separately.

   NOTE: The benefit of the doubt is given when the intended meaning is not clear from the context.

G. Use ' to show omissions in contractions.

NOTE: Plurals of numerals, letters, symbols and words involving the apostrophe are scored under spelling.

An unformed possessive or an unnecessary possessive is scored as a word-choice error for wrong case.

IV. Word Level Categorizations

A. Spelling. Each misspelled word is coded. As explained in the history and rationale section preceding these guidelines for categorizing mechanics and grammar, NAEP at one point did try to distinguish between different types of spelling errors, but the procedure used was not found to provide particularly useful information. The procedure NAEP has most recently implemented is to use the following guidelines to determine instances of misspelled words, but to code each misspelled word to a single category.

If a reader is in doubt about whether an error is one of agreement or a misspelling, it is coded as an agreement error. A "misspelling" that results in another word must be categorized within the context of its sentence. The readers must use their best judgment as to whether it is a spelling error or a word-choice error. Abbreviations or any mistakes associated with abbreviations are not coded as errors when:

1. groups of letters do not make legitimate words;

2. two words are made into one (alot) or one word is made into two (room mate);

3. clear cases of homonym confusion (dear for deer) are coded as spelling errors, not word-choice errors;

4. plurals are not formed (clearly not an agreement error--United State);

5. plurals are formed incorrectly;

6. superfluous plurals are formed (parkings lots);

7. words are reversed (saw/was) or letters within words are reversed (b/d, m/w, b/p, u/n)--(this may result from a perception problem);

8. wrong word divisions at the end of a line are made; and,

9. a sentence is begun with a numeral.

B. Word Choice. A word-choice error results when one word is used instead of another that clearly would have been better. If a particular word can be changed one or more ways, any of which would correct the diction error, the word is categorized as a word-choice error. As explained earlier, as for spelling, NAEP has tried categorizing word-choice errors into several categories. However, current practice is to use the following guidelines to code word-choice errors to a single category.

Basically a word-choice error is coded when:

1. the word is off by some shade of meaning;

2. the word has no logical meaning;

3. the word has multiple or ambiguous meanings;

4. the wrong principal part of a verb is used (was broke, stole treasure); and,

5. a verb adjective or adverb form is attempted that is non-existent or unacceptable (beautifulest, busted).

C. Capitalization. Capitalization errors are coded in the following situations.

1. The first word in a sentence is not capitalized.

2. Proper nouns or adjectives are not capitalized.

3. The pronoun I is not capitalized.

NOTE: Occasionally a word cannot be deciphered. When a word cannot be read, NAEP categorizes it as illegible.